IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A compiler for generating object code from an input source program, the object code including user-defined machine instructions defined by a user, the compiler comprising:

analyzing, by a syntax analyzer, ~~configured to analyze~~ whether or not an operation described in the source program conforms to grammatical rules, outputting, by the syntax analyzer, a result of the analysis as an syntax-analysis result, and ~~to analyze whether or not a combination of the operations defines an intrinsic function and details of processing operations of the intrinsic function~~ associating, by the syntax analyzer, the details of the processing operations with the user-defined machine instructions and storing the associated details of the processing operations and user-defined machine instructions in an intrinsic function definition database when detecting that the combination of the instructions is a function definition of the intrinsic function which defines the details of the processing operations associated so as to be converted into the user-defined machine instruction;

~~an intrinsic function definition database configured to store a definition of the intrinsic function and the details of the processing operations of the intrinsic function, as analyzed by the syntax analyzer;~~

generating, by a code generator, ~~configured to generate~~ machine instructions from the source program based on ~~a result of the processing of~~ the syntax-analysis result of the syntax analyzer; and

replacing, by a code optimizer, ~~configured to optimize~~ the machine instructions [[to]] by the corresponding user-defined machine instructions ~~corresponding to the details of the processing operations of the intrinsic function~~ stored in the intrinsic function definition database, ~~in a~~ in the case where ~~a string of~~ the machine instructions generated by the code

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generator are ~~in agreement~~ <u>associated</u> with the details of the processing operations ~~of the~~

~~intrinsic function~~ stored in the intrinsic function definition database.

Claim 2 (Currently Amended): The compiler of claim 1, further comprising

<u>dividing, by</u> a lexical analyzer<u>,</u> ~~configured to divide~~ the operations described in the

source program into tokens, wherein

the syntax analyzer analyzes whether or not the tokens conforms to grammatical rules,

and analyzes whether or not the combination of the tokens ~~defines the intrinsic function and~~

~~the details of the processing operations of the intrinsic function~~ <u>is a function definition of the</u>

<u>intrinsic function.</u>

Claim 3 (Original): The compiler of claim 1, wherein the syntax analyzer inputs the

definition of the intrinsic function and the details of the processing operations of the intrinsic

function from an intrinsic function information file different from the source program.

Claim 4 (Original): The compiler of claim 1, wherein the definition of the intrinsic

function includes information of parameter types and an identification name.

Claim 5 (Original): The compiler of claim 2, wherein the definition of the intrinsic

function includes information of parameter types and an identification name.

Claim 6 (Original): The compiler of claim 3, wherein the definition of the intrinsic

function includes information of parameter types and an identification name.

Claim 7 (Currently Amended): The compiler of claim 1, wherein ~~plural definitions of details of the processing operations can be defined in the intrinsic function definition database relative to a single intrinsic function~~ in the intrinsic function definition database, plural kind of details of the processing operations can be defined for one intrinsic function.

Claim 8 (Currently Amended): The compiler of claim 2, wherein ~~plural definitions of details of the processing operations can be defined in the intrinsic function definition database relative to a single intrinsic function~~ in the intrinsic function definition database, plural kind of details of the processing operations can be defined for one intrinsic function .

Claim 9 (Currently Amended): The compiler of claim 3, wherein ~~plural definitions of details of the processing operations can be defined in the intrinsic function definition database relative to a single intrinsic function~~ in the intrinsic function definition database, plural kind of details of the processing operations can be defined for one intrinsic function.

Claim 10 (Currently Amended): The compiler of claim 4, wherein ~~plural definitions of details of the processing operations can be defined in the intrinsic function definition database relative to a single intrinsic function~~ in the intrinsic function definition database, plural kind of details of the processing operations can be defined for one intrinsic function.

Claim 11 (Original): The compiler of claim 1, wherein the definition of the intrinsic function and the details of the processing operations of the intrinsic function can be described by C language.

Claim 12 (Original): The compiler of claim 1, wherein the definition of the intrinsic

function and the details of the processing operations of the intrinsic function can be described

by hardware description language.

Claim 13 (Currently Amended): A computer implemented method of compiling for

generating object code from an input source program, the object code including user-defined

machine instructions defined by a user, the computer implemented method comprising:

analyzing, by a syntax analyzer, whether or not an operation described in the source

program conforms to grammatical rules, outputting, by the syntax analyzer, a result of the

analysis as an syntax-analysis result, and analyzing, by the syntax analyzer, whether or not a

combination of the operations defines an intrinsic function and details of processing

operations of the intrinsic function associating, by the syntax analyzer, the details of the

processing operations with the user-defined machine instructions and storing the associated

details of the processing operations and user-defined machine instructions in an intrinsic

function definition database when detecting that the combination of the instructions is a

function definition of the intrinsic function which defines the details of the processing

operations associated so as to be converted into the user-defined machine instruction;

storing a definition of the intrinsic function and the details of the processing

operations of the intrinsic function, as analyzed by the syntax analyzer in an intrinsic function

definition database;

generating, by a code generator, machine instructions from the source program based

on a result of the processing the syntax-analysis result of the syntax analyzer; and

optimizing replacing, by a code optimizer, the machine instructions [[to]] by the

corresponding user-defined machine instructions corresponding to the details of the

processing operations of the intrinsic function stored in the intrinsic function definition

database, in a in the case where a string of the machine instructions generated by the code

generator are in agreement associated with the details of the processing operations of the

intrinsic function stored in the intrinsic function definition database.

Claim 14 (Currently Amended): The computer implemented method of claim 13,

further comprising

dividing, by a lexical analyzer, the operations described in the source program into

tokens, wherein

in the analyzing by the syntax analyzer, whether or not the tokens conforms to

grammatical rules is analyzed, and whether or not the combination of the tokens defines the

intrinsic function and the details of the processing operations of the intrinsic function is a

function definition of the intrinsic function is analyzed.

Claim 15 (Original): The computer implemented method of claim 13, wherein the

definition of the intrinsic function and the details of the processing operations of the intrinsic

function are inputted, by the syntax analyzer, from an intrinsic function information file

different from the source program.

Claim 16 (Original): The computer implemented method of claim 13, wherein the

definition of the intrinsic function including information of parameter types and an

identification name are analyzed by the syntax analyzer and stored in the intrinsic function

definition database.

Claim 17 (Currently Amended): The computer implemented method of claim 13,

wherein plural definitions of details of processing operations can be defined in the intrinsic

~~function definition database relative to a single intrinsic function~~ in the intrinsic function

definition database, plural kind of details of the processing operations can be defined for one

intrinsic function.

Claim 18 (Original): The computer implemented method of claim 13, wherein the

definition of the details of the processing operations of the intrinsic function described by C

language is analyzed by the syntax analyzer.

Claim 19 (Original): The computer implemented method of claim 13, wherein the

definition of the intrinsic function and the details of the processing operations of the intrinsic

function described by hardware description language is analyzed by the syntax analyzer.

Claim 20 (Currently Amended): A program development ~~tool~~ system for ~~designing~~

developing an application program for a processor ~~installed user-defined hardware~~ which can

execute user-defined machine instructions defined by a user, the program development ~~tool~~

system comprising:

a ~~compiler~~ compile apparatus for generating object code from the application program

comprising

a lexical analyzer configured to divide an operation described in a source code

of the application program into tokens,

a syntax analyzer configured to analyze whether or not the tokens conform to

grammatical rules, ~~and to input a hardware definition of a user-defined instruction and~~

~~convert the input hardware definition into a definition of the intrinsic function and details of~~

~~processing operations of the intrinsic function~~ output a result of the analysis as an syntax-

analysis result, and associate the details of the processing operations with the user-defined

machine instructions and store the associated details of the processing operations and user-defined machine instructions in an intrinsic function definition database when detecting that the combination of the instructions is a function definition of the intrinsic function which defines the details of the processing operations associated so as to be converted into the user-defined machine instruction,

an intrinsic function definition database configured to store the definition of the intrinsic function and the details of the processing operations of the intrinsic function, converted by the syntax analyzer,

a code generator configured to generate machine instructions from the application program based on a result of the processing of the lexical analyzer and a result of processing of the syntax-analysis result of the syntax analyzer, and

a code optimizer configured to optimize the machine instructions [[to]] by the corresponding user-defined machine instructions corresponding to the details of the processing operations of the intrinsic function stored in the intrinsic function definition database, in a in the case where a string of the machine instructions generated by the code generator are in agreement associated with the details of the processing operations of the intrinsic function stored in the intrinsic function definition database; and

a simulator configured to debug the application program compiled by the compiler a simulator apparatus configured to simulate the application program including the machine instruction output from the compile apparatus.